

(12) UK Patent Application (19) GB (11) 2 352 944 (13) A

(43) Date of A Publication 07.02.2001

(21) Application No 0013114.4
 (22) Date of Filing 31.05.2000
 (30) Priority Data
 (31) 99019813 (32) 31.05.1999 (33) KR
 (31) 99036383 (32) 30.08.1999

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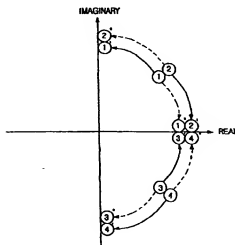
(51) INT CL⁷
 H04B 1/707, H04J 13/04, H04L 27/34
 (52) UK CL (Edition S)
 H4P PAQ PDCSL
 (56) Documents Cited
 EP 0921652 A2 WO 99/59265 A1 WO 99/38337 A2
 WO 00/42752 A1
 Electronic Letters, Vol. 34, No.23, 12 November 1998,
 pages 2210-2211 INSPEC Abstract Accession No.
 6468729 & "Proc. of. 3rd CDMA Int. Conf.", 1998, ETRI,
 pp 101-105
 (58) Field of Search
 UK CL (Edition R) H4P PAQ PDCSL
 INT CL⁷ H04B 1/707, H04J 11/00 13/02 13/04, H04L
 23/02 27/34
 Online: WPI, EPODOC, JAPIO, INSPEC

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(54) Abstract Title
 Orthogonal modulation scheme with reduced peak to average power ratio (PAPR)

(57) The present invention relates to an apparatus and method for modulating data by employing orthogonal variable spreading factor (OVSF) codes in a mobile communication system. A code generating means generates at least one spreading code to be allocated to a channel and is selected such that two consecutive pairs of in-phase (I) and quadrature (Q) data correspond to two points located on the same point in the phase domain (see figure) or are symmetrical with respect to the zero point (see fig. 9). Data for transmission is then spread using the generated code and phase rotated by a Walsh rotator such that the phase difference between consecutive points is ninety degrees (90°). The ninety degree phase difference leads to a reduction in the peak to average power ratio (PAPR) of a mobile station. Preferably the orthogonal complex quadrature phase shift keying (OCQPSK) modulation scheme is adopted.

FIG. 8



At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.